

# PREVIOUS EXPERTISE AND INITIAL ATTITUDE TOWARDS VISION SCREENING IN HEALTH CARE PROFESSIONALS ENROLLED IN EUSCREEN PROJECT

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## Abstract

**INTRODUCTION:** The aim of the study is to evaluate the background knowledge and attitude towards vision screening in health care professionals enrolled in EUSCREEN project ("Implementation of optimized childhood vision and hearing screening programmes in middle-income countries in Europe").

**METHOD:** The analysis involved 178 questionnaires, filled out by family doctors and nurses who attended professional visual acuity training, organised at the beginning of EUSCREEN project. The courses took place at the University of Medicine and Pharmacy Cluj-Napoca, between October and November 2017.

**RESULTS:** Out of the 178 medical personnel, 132 (74.15%) had not participated in any other screening programme, whereas a further 44 persons (24.71%) had taken part in various screening programmes. Also, 115 (64.60%) of the medical staff who attended the training had not previously performed visual acuity testing in children.

Out of the 178 respondents, 176 (98.87%) consider that vision screening in children should be carried out in the general practitioners' or school medical offices.

Main reasons for failing to obtain informed consent were: carelessness for a health issue/deficiency

of health education (59), mistrust in the screening or medical staff (26), or parents' lack of time (24). Likely causes for failure of screening mentioned in the questionnaires were: poor collaboration with parents (67), lack of parents' consent (22) or compliance (18). Proposed solutions to raise compliance to screening were: efficient nurse-parent communication (47), explaining the importance of vision acuity testing in small children (58).

In the matter of remuneration of medical staff, 68% (122) consider it should be made in addition to the salary, meanwhile 26% (46) consider the screening activity as a compulsory duty of their job.

**DISCUSSION:** The respondents helped in predicting causes of failure to obtain the informed consent and failure in implementation of a visual screening programme, suggesting that lack of medical education and poor compliance would be the main causes; they also estimated that a good nurse-parent communication could be an efficient method of persuading the parents. The payment of the medical personnel involved in the screening was preferred by the respondents, but this remains a controversial topic.

**CONCLUSIONS:** A pediatric visual acuity screening programme in Romania is an achievable desideratum, but because of the lack of previous expertise in this field, it should be preceded by a thorough theoretical and practical training.

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Probing the initial opinion, expectations and previous expertise of medical staff regarding screening programmes can provide with significant knowledge, required for the launch and progress of a visual screening program, and also facilitates evaluation of outcomes in the screening implementation study.

**Keywords: visual acuity screening, debriefing session, amblyopia**

## INTRODUCTION

Amblyopia, a medical condition also referred to as “lazy eye” signifies the reduction of best-corrected visual acuity of one or both eyes that cannot be attributed exclusively to a structural abnormality of the eye [1]. It develops in early childhood and, which is of utmost importance, its timely detection followed by prompt, appropriate treatment can lead to a restoration or enhancement of visual acuity. Recent extensive studies reported a 1.6% prevalence of amblyopia among preschoolers in the US [2,3]. By and large, due to their extremely busy work schedule, primary care physicians are not consistently conducting pediatric vision screening during routine clinical visits [4,5].

In Romania there is currently no established national preschool visual screening system. The EUSCREEN project – “Implementation of optimized childhood vision and hearing screening programmes in middle-income countries in Europe”, as the title itself suggests, is aimed at detecting visual deficiencies in children between ages 4 and 6. The county of Cluj was designated for the pilot study, the latter being carried out over a 2-year period: 2018 and 2019. By the completion of the study, the objective would be to implement a vision screening program at a national level.

Screening is defined as “a fundamental concept that links clinical practice in individuals, with public health practice in populations” [6]. One of the main concerns of any screening project primarily relate to its cost-efficiency. A recently-published review article on the existing vision screening programmes in 18 countries across 5 continents highlighted “the urgent need for the development of an inexpensive and comprehensive screening tool” [7]. Visual acuity testing in young children performed by eyecare professionals such as ophthalmologists, optometrists revealed

very high testability, sensitivity, and specificity (99%,100%, and 97%, respectively) [8]. However, the involvement of eyecare professionals in screening is limited due to both a shortage of pediatric ophthalmologists and the limited financial resources of these type of programs. Alternatively, nurses are the healthcare providers generally involved in preventive and health promotion activities. According to a pilot study conducted in Malaysia, involvement of nurses has proved more practical and cost-effective since they are already a part of the health system [9].

Within the Euscreen project, the medical personnel intended to examine the visual acuity were chosen to be the nurses in the kindergardens in the city of Cluj-Napoca and IN the other five towns (Turda, Campia-Turzii, Huedin, Dej, Gherla), respectively the family doctors and their nurse practitioners in the rural areas in the county.

Due to the key-role held by these medical professionals in the EUSCREEN project, it seemed appropriate to conduct an initial survey on their outlook and previous expertise regarding screening programmes in general and visual screening in particular.

The purpose of the present study is to elucidate the background knowledge and attitude towards vision screening of the nurses and family doctors potentially enrolled in the project.

## METHOD

Two-day training sessions for family doctors and nurses were organized prior to the commencement of the screening. These courses were structured into an initial overview of the Euscreen project and an induction on visual acuity screening and visual disorders, followed by a detailed exemplification of the visual acuity measurement technique and a practical workshop in which every partaker had the opportunity to perform a visual acuity test under the direct supervision of a pediatric ophthalmologist. The last part of the program included a debriefing session during which the attendants were asked to anonymously answer a few questions concerning their own previous screening experience as well as their opinion and expectations with regard to the present screening project.

We have analysed a number of 178 questionnaires filled out during the debriefing sessions by doctors and nurses who attended professional training courses between the 21st – 22nd of October, the 4th – 5th of November and the 18th– 19th of November 2017 respectively.

## RESULTS

The analysis of the answers has revealed the fact that 132 out of the total 178 (74.15%) medical staff have not participated in any other screening programmes. A further 44 persons (24.71%) have taken part in various screening programmes, among which cervical cancer screening (22 persons), heart condition screening (16 persons), breast cancer screening (3 persons), dyslipidemia screening (3 persons), humoral parameter screening in obese children (3 persons), prostate condition screening (1 person). 2 persons (1.12%) have not answered the question.

64.60% of the medical staff who attended the training course (115 out of 178) acknowledged not having screened vision acuity in children before.

98.87% (176 out of 178) of the respondents consider that a vision screening programme mediated by school medical practices and general practitioner's practices is the best way to have the highest possible screening rates among children.

With respect to the participation rate of children from education establishments / localities where the respondents work, 8.98% of the medical staff (16 out of 178) anticipate a percentage of 100%; 18.53% of the medical staff (33 out of 178) estimate a participation of more than 90%; 21.91% of the medical staff (39 out of 178) anticipate a percentage between 80 and 90%; 9.55% of the medical staff (17 out of 178) believe that 70-80% of the children will take part in the study; 7,86% of the medical staff (14 out of 178) anticipate a percentage between 60 – 70%; 6,74 of the medical staff (12 out of 178) estimate a percentage between 50 – 60%; 5,05% of the medical staff (9 out of 178) believe the participation will be below 50%. The rest of 21.34% either haven't answered the question (29 persons) or have provided inconclusive answers / have given a number instead of a percentage (9 persons).

Among the main reasons that may lead to a failure of the screening programme, the respondents mentioned: poor collaboration with parents (67 persons), lack of parents' consent (22) or compliance (18), as well as lack of parents' confidence in screening programmes (4). Possible issues related to data reporting (11 answers) were signalled, together with obstacles in attending the ophthalmological exam in cases of low vision acuity (11 persons) (long distance to specialised practices, long waiting period for an appointment), as well as the refusal of the ophthalmologist to fill in the child evaluation form (11 answers) or the communication of the results of the ophthalmological exam by parents (11 answers). A lower number of learners anticipate a difficult collaboration with the staff of the kindergartens (7 persons) or with the children (6 persons) or a poor organisation of the project (6 persons).

53.93% of the participants to the training course (96 out of 178) expect parents / legal representatives to be open to the organisation of the vision screening programme.

The main reasons for which parents might not give their consent to the participation of their children in the screening have to do mostly with ease, carelessness, indifference, lack of health education (59 responses), parents' lack of time (24 responses), lack of understanding of the benefits of the screening (16 responses), lack of trust in the screening (11 responses) or in the medical staff (15 responses). 12 other persons pointed to the precarious economic situation of the family as a possible cause for not attending the ophthalmological exam (long distance from home to the practice) or for not following the prescribed treatments (occlusion, optical correction). Moreover, parents might refuse to enrol their children in the screening if the children have already been seen by an ophthalmologist (11 responses).

As to the methods that could convince parents to give their consent for their children's participation in the screening, many learners consider the following as proper solutions: an efficient communication between the nurse and the parent (47 persons), explaining the importance of vision acuity, of the study and of the possibility to recover vision acuity until the age of 7 years (58 persons) in view of making parents

accountable (18 persons). Prompting by medical and teaching staff is also welcome (20 persons), as well as providing information material (leaflets, videos) (12 responses). An additional 10 persons consider the idea of (vision acuity screening and ophthalmological examination if necessary) free of charge could be attractive for parents.

As to children's attitude towards a vision acuity screening programme, the respondents estimate them to be open (57.30%) or very open (26.96%). In this respect, the learners propose transforming the vision acuity screening into an attractive game for children (82 responses), offering rewards (stickers, sweets, diplomas) and properly engaging the children (praises, prompting, calmly and patiently carrying out the evaluation) (26 responses).

The medical staff from education establishments consider the management of the kindergarten as: open (41.32%) or very open (47.93%) to a screening programme; likewise, they believe the teachers will also be open (50%) or very open (30%) to such an endeavour.

As to ways of getting the target group (children and their representatives) involved in the screening, most medical staff from GP's practices provided no answer (101 persons). The respondents proposed meetings with parents and medical staff (22 persons), during which correct information with respect to the necessity and the advantages of the screening should be offered (21 persons). 7 other persons suggested distributing leaflets and making posters, as well as resorting to the media (5 persons) by means of advertisements, local newspapers, the website and facebook pages of town halls.

To the question: "Do you believe other professionals should also be involved in the screening programme? If yes, who and why?", 25.84% (46 persons) of the respondents believe it is not necessary to get other professionals involved in the screening, while 24.71 % (44 persons) provided no answer; 26.96% (48 persons) think it is necessary to get ophthalmologists involved and 11.23 % (20 persons) feel kindergarten staff should also be involved (managers / teachers / caretakers). A further 9 person (5.05%)

mentioned the necessity of getting psychologists involved, as well as social / community workers – also 9 persons (5.05%).

To the same question related this time to the involvement of other institutions in the screening programme, 34.83 % of the respondents (62 persons) provided no answer, while 27.52 % (49 persons) believe it is not necessary to get other institutions involved in the screening. 12.36 % (22 persons) consider it would be appropriate to get ophthalmological practices involved, 6.74 % (12 persons) town halls and 4.49 % (8 persons) the General School Inspectorate.

Most respondents (122 persons) feel the participation of medical staff in the screening programmes should be paid in addition to their salary, 46 learners consider the activity to be part of their job description and some of these 46 added a half-tone saying that, since it was a project – study (taking place outside the working programme), it should have been however paid.

With respect to the activities that the EU-SCREEN team could organise in order to support the medical staff during the vision acuity screening programme, most learners: 59 persons (33.14%) answered: a good collaboration and counselling during the project; another important part: 49 persons (27.52 %) consider important to have the necessary material for the screening provided; while 36 persons (20.22 %) gave no answer or answered "I don't know". 13 persons (7.30%) support the simplification of paperwork, 5 persons request an online, up-to-date data base, where data could be introduced and reported (exclusively in a digital way); moreover, 5 respondents wish a longer period for filling in and reporting the data. In addition, 8 persons think the EUSCREEN team could get involved also in directing children to ophthalmological practices and in recruiting ophthalmologists for the screening (6 persons) and in a better advertising of the screening programme (including the Facebook page of the project) (7 persons).

## DISCUSSION

One of the main remarks is that approximately half (49,42%) of the interviewees anticipate a fairly large participation rate to the screening, exceeding 80%. Additionally, the vast majority of the

respondents consider that if the child vision screening programme would take place in school medical offices and general practitioner's practices, the highest possible screening rates would be ensured, thus making the implementation of the screening an achievable necessity.

Concerning previous screening expertise of the medical staff, the majority (74 %) of the medical personnel that enrolled in the EUSCREEN project had not taken part in any other screening programme, and furthermore, 65% had never tested visual acuity in children. These findings brought to light the complex aspects of impact and ethical notions of a screening programme and reinforced the team's initial training strategy which was intended to put emphasis on practice rather than theory.

Another relevant matter was related to the potential failure in the implementation of the screening programme, where the majority of respondents predicted a poor collaboration and compliance of parents. Other estimated issues were related to data reporting, difficulties in scheduling and attending an ophthalmological appointment and poor feed-back from the ophthalmologist or parents in referred children. We also traced some of these impediments in other reports, such as a 2015 study regarding the vision screening experience of school nurses in Colorado, USA, where the challenges encountered were: poor student cooperation/inability to screen, inadequate testing space and lighting, insufficient personnel, and poor parental compliance with referrals [10].

When requested to estimate some of the main reasons for which parents might not give their consent for the visual screening, our respondents considered carelessness, indifference, lack of health education, lack of understanding of the benefits of the screening as key factors; but also lack of trust in the screening or in the medical staff. Similarly, an Australian study, aimed to evaluate the extent of public understanding of mass screening for disease, found that out of a total of 835 respondents only 21% correctly understood that screening tests are for asymptomatic people. So this understanding was related to education in general, and health education in specific [11].

The lack of trust in medical care programmes is also cited in literature, mostly because patients do not seem to receive the amount of information they would normally expect about screening [12]. This is because consultations are usually short and information materials cannot be a substitute for good verbal communication [13].

As expected, among methods of persuading parents to give their consent for screening, many respondents consider that most effective method is nurse-parent communication, with thorough explanations over the importance of early vision acuity testing. In this matter, specialty literature recommends that informed patient consent, especially for this type of screening that is both offered and delivered by health professionals, should be performed in the context of a shared decision between the patient and health professional, with the obligation to comply with the autonomy of the patient [14].

Regarding funding of screening activities, most respondents consider that medical staff involved in screening should be paid in addition to their salary. However, literature data shows that paying healthcare providers by the number of persons they pursued to get screened works against the spirit of enabling patients/parents to make an informed choice on whether or not they want them/their children to be screened [15] [16].

## CONCLUSION

The most relevant aspects that emerged from studying the debriefing session questionnaires were that a child vision screening programme in Romania is a feasible attempt, but because of the lack of previous expertise in this field, an initial methodical, comprehensive both theoretical and practical training is mandatory.

All in all, the quest to evaluate the expertise of the personnel regarding screening programmes can provide the implementation team with a lot of important information, required for a good start-up and a "smooth" progress of the visual screening program.

Also, requesting the personnel's initial opinion and expectations, can help the implementation team to

better assess some of the final outcomes of the study, by comparing them to these initial requirements.

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